BLUEPRINT

THE EVOLUTIONARY ORIGINS OF A GOOD SOCIETY

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Little, Brown Spark
New York Boston London

Contents

The world is better the closer you are to Erika

Preface: Our Common Humanity

When I was a boy spending the summer in Greece in July of 1974, the military dictators unexpectedly fell from power. A former prime minister, Konstantinos Karamanlis, returned from exile to Syntagma (Constitution) Square in central Athens. Enormous crowds gathered in all the avenues approaching the square, and my mother, Eleni, took me and my brother Dimitri out into the city that night. In the preceding hours, the junta had sent scores of trucks with armed men and megaphones into the streets. "People of Athens," the soldiers blared, "this doesn't concern you. Stay inside."

My mother ignored the warnings. We got as close as a block from Syntagma Square, near the royal palace and the national zoo. She boosted us onto a huge stone wall topped with a wrought-iron fence that kept the animals on the other side from escaping. Dimitri and I stood with our backs pressed against the metal rails in the narrow bit of ledge that was available to us, and my mother stood below us wedged in among everyone else.

The crowd was packed body to sweaty body. When Karamanlis arrived in Athens in the middle of the night, the crowd pulsed with power. The masses began chanting slogans revealing their pent-up frustrations with years of dictatorial rule and foreign meddling: "Down with the torturers!" "Out with the Americans!"

Perhaps oddly for a man who has spent his adult life studying social phenomena, I have never liked crowds. As a child clinging to the fence, I remember feeling excited but mostly afraid. Even at age twelve, I knew that I was witnessing something unusual—certainly an event unlike anything I had ever seen—and that scared me.

The crowd grew louder and angrier. I remember not understanding why, if they were supposed to be celebrating, the people were so agitated. I looked down at my mother with complex

feelings of pride and alarm because she—my beautiful, gentle mother—was getting into the spirit of things too. She was proud to be Greek and, like many of her fellow citizens, was rejoicing at the restoration of democracy. I also knew that she was intensely devoted to our education and wanted us to participate in and learn from this historic event. She was the sort of parent who took us to civil rights marches and anti-war demonstrations back in the United States and wanted us to see the world.

But I also felt fear because I could see in my mother's eyes that she was being swept away by a powerful force. I watched uneasily as she became more animated. I worried that she might forget us up on that stone ledge or that we might get separated as the crowds shifted. Suddenly, as the anti-American epithets grew louder, she pointed up at me and my brother and shouted, "Να οι Αμερικανοί!"—"*There* are the Americans!"

What could possibly have possessed her to do this? I grew up on a heavy diet of Greek mythology, and I wonder if, in that moment, the story of the child-killing mother Medea might have flashed before my eyes.

To this day, I don't know what my mother meant to accomplish by her outburst. She was a deeply sensible and loving caregiver who adopted children of diverse racial backgrounds in addition to having her own. Why would she draw reckless attention to her beloved sons' outsider status in the midst of a volatile crowd? Did she believe that such a gesture might work to cool the ardor of an unthinking mob? I can't ask her these questions because she died when I was twenty-five and she was forty-seven, after a long illness and a life devoted to scientific and humanitarian causes.

In the years since, I have come to understand some of the primal forces that might have motivated my mother, forces that lie at the core of my arguments in this book and that ordinarily work for the good of our societies. Natural selection has equipped us with the capacity and desire to join groups, and to do so in particular ways. For instance, we can surrender our own individuality and feel so aligned with a collective that we do things that would seem against our personal interests or that would otherwise shock us.

Nonetheless, our ability to be charitable to members of our social groups provides us with something very profound: we can see ourselves as *all* being part of the same group, which means

that, in the extreme, we can see that we are all human beings. We can efface the tribalism of small groups and find a kindness for large groups. Knowing my mother's values and her commitment to the common humanity shared by all people, I choose to see her statement this way: she was pleading for forbearance. Clearly, not all Americans were bad people; some were just young boys, like her beloved children.

A few years later, when I was fifteen, I saw another volatile crowd, this time while on a trip to Crete with my socialist grandfather, who was also named Nicholas Christakis. We watched the leader of the Panhellenic Socialist Movement, Andreas Papandreou, whip a vast crowd into a frenzy during an election. By then, I had seen movies of huge political rallies, and I could not believe I was witnessing such a phenomenon myself. We stood way in the back of the crowd, quite safe, but still I could feel its power. My grandfather took me aside and explained that leaders could sometimes draw on people's sense of community and their xenophobia simultaneously, and he also explained the origins of the word *demagogue.* In ancient Greece, it meant the use of exceptional oratorical skills to advance the interests of the common people. I was tremendously roused by the experience, and, despite my grandfather's benign etymology, I can still remember the disturbing feeling that such a crowd might also be capable of injustice.

In his classic work *Extraordinary Popular Delusions and the Madness of Crowds*, published in 1841, Scottish journalist Charles Mackay argued that people "go mad in herds, while they only recover their senses slowly, and one by one."[1] People in crowds often act in thoughtless ways—shouting profanities, destroying property, throwing bricks, threatening others. This can come about partly because of a process known to psychologists as *deindividuation*: people begin to lose their self-awareness and sense of individual agency as they identify more strongly with the group, which often leads to antisocial behaviors they would never consider if they were acting alone. They can form a mob, cease to think for themselves, lose their moral compass, and adopt a classic us-versus-them stance that brooks no shared understanding.

Despite my mostly negative personal experience with crowds, it is clear that they can be a force for good. Even nonviolent crowds can threaten dictators and authoritarian governments—as in Greece in 1974, in China in 1989 (at Tiananmen Square), in

Tunisia in 2010 (the Arab Spring), and in Zimbabwe in 2016 (the anti-Mugabe demonstrations). Crowds are especially feared by those in power when they emerge organically, without explicit organization, as they frequently do. In recent years, governments have tried to control access to the internet precisely to keep people from more easily organizing themselves.

Consider the famous organized civil rights marches in the United States, from the March on Washington in 1963 (where Martin Luther King Jr. delivered his famous "I Have a Dream" speech) to the march at Pettus Bridge in 1965 (where the Alabama police brutally beat African-American protesters demanding voting rights). The coalescence of concerned and aggrieved individuals into larger groups reinforces their own beliefs, but it also demonstrates to outsiders a power not available to a similar number of isolated persons acting independently.

For good or ill, forming crowds comes so naturally to our species that it is even seen as a fundamental political right. It is codified in the First Amendment to the U.S. Constitution, which notes that "the right of the people peaceably to assemble, and to petition the Government for a redress of grievances" shall not be infringed by law. The right to assemble is similarly encoded in constitutions of countries all over the world, from Bangladesh to Canada to Hungary to India.[2] As with the capacity for empathy, the inclination to assemble into groups and deliberately choose friends and associates is part of our species' universal heritage.

Mutual Understanding

As I write, the United States seems riven by polarities—right and left, urban and rural, religious and a-religious, insiders and outsiders, haves and have-nots. Analyses reveal that both political polarization and economic inequality are at century-long peaks.[3] American citizens are engaged in vocal debates about their differences, about who can and should speak for whom, about the meaning and extent of personal identity, about the inexorable pull of tribal loyalties, and about whether the ideological commitment to the melting pot in the United States—and to a common identity as Americans—is feasible or even desirable.

Lines appear sharply drawn. It may therefore seem an odd time for me to advance the view that there is more that unites us

than divides us and that society is basically good. Still, to me, these are timeless truths.

One of the most dispiriting questions I have encountered in my own laboratory research is whether the affinity people have for their own groups—whether those groups are defined by some attribute (nationality, ethnicity, or religion) or by a social connection (friends or teammates)—must necessarily be coupled with wariness or rejection of others. Can you love your own group without hating everyone else?

I have seen the effects of overidentifying with one's group and witnessed mass delusions up close, and I have also studied them in my lab using experiments with thousands of people and by analyzing naturally occurring data describing the behavior of millions. The news is not all bad. Human nature contains much that is admirable, including the capacity for love, friendship, cooperation, and learning, all of which allows us to form good societies and fosters understanding among people everywhere.

I first began to think about this issue—of how humans are fundamentally similar—almost twenty-five years ago during my work as a hospice doctor. Death and grief unite us like nothing else. The universality of death and of our responses to it cannot help but impress human similarity upon any observer. I have held the hands of countless dying people from all sorts of backgrounds, and I do not think I have met a single person who didn't share the exact same aspirations at the end of life: to make amends for mistakes, to be close to loved ones, to tell one's story to someone who will listen, and to die free of pain.[4] The desire for social connection and interpersonal understanding is so deep that it is with each of us until the end.

My vision of us as human beings, which lies at the center of this book, holds that people are, and should be, united by our common humanity. And this commonality originates in our shared evolution. It is written in our genes. Precisely for this reason, I believe we can achieve a mutual understanding among ourselves.

In highlighting this, I want to be clear that I am not saying that there are no differences among social groups. It's obvious that some groups struggle with social, economic, or ecological burdens that other groups can only imagine. It's not immediately obvious what modern-day hunter-gatherers in Tanzania's Rift Valley might share with software engineers in California's Silicon Valley. But a focus on the differences among human groups (fascinating and

actual though they might be) overlooks another fundamental reality. Our preoccupation with differences is akin to focusing on variations in weather between Boston and Seattle. Yes, one will find different temperatures, amounts of precipitation and sunshine, and wind conditions in these two cities, and these can matter (possibly a lot!). Nevertheless, the *same* atmospheric processes and underlying physical laws hold in both of them. Moreover, weather around the world is inextricably linked. We could even say that the fundamental point of studying the planet's diverse microclimates is not to enhance the understanding of local weather conditions but rather to have a fuller understanding of weather in general.

Therefore, I am less interested in what is different among us than in what is the same. Even though people may have varied life experiences, live in different places, and perhaps look superficially different, there are significant parts of others' experiences that we can all understand as human beings. To deny this would mean abandoning hope for empathy and surrendering to the worst kind of alienation.

This fundamental claim about our common humanity has deep philosophical roots as well as empirical foundations. In his essay "The Culture of Liberty," Peruvian novelist Mario Vargas Llosa notes that people who live in the same place, speak the same language, and practice the same religion obviously have much in common. But he points out that these collective traits do not fully define each individual. Seeing people only as members of groups is, he says, "inherently reductionist and dehumanizing, a collectivist and ideological abstraction of all that is original and creative in the human being, of all that has not been imposed by inheritance, geography, or social pressure." Real, personal identity, he argues, "springs from the capacity of human beings to resist these influences and counter them with free acts of their own invention."[5]

True enough. But the exercise of individual freedom and the focus on our individuality is just one way to efface tribalism. We can also broaden our perspective to the level of our *universal* heritage. As human beings, we have a shared inheritance, shaped by natural selection, regarding how to live with one another. This inheritance gives us a mechanism to abandon a dehumanizing perspective that privileges difference.

Think of how exposure to a foreign culture can be both a

bracing and a reassuring experience. What starts as a heightened sensitivity to differences in attire, smells, appearances, customs, rules, norms, and laws yields to the recognition that we are similar to our fellow human beings in numerous fundamental ways. All people find meaning in the world, love their families, enjoy the company of friends, teach one another things of value, and work together in groups. In my view, recognizing this common humanity makes it possible for all of us to lead grander and more virtuous lives.

Ironically, many people come to this realization during war, which is the starkest manifestation of between-group animosity. There is a poignant demonstration of this in *Band of Brothers*, a 2001 television series based on the experiences of Easy Company in the 101st Airborne Division during World War II. One of the real-life soldiers, Darrell "Shifty" Powers, speaking late in his life in documentary footage that accompanied the show, made the following observation about a German soldier: "We might have had a lot in common. He might've liked to fish, you know, he might've liked to hunt. Of course, they were doing what they were supposed to do, and I was doing what I was supposed to do. But under different circumstances, we might have been good friends."[6] Not just friends but *good* friends. In a 2017 documentary about another war—a series called *The Vietnam War,* directed by Ken Burns and Lynn Novick—a Vietcong veteran named Le Cong Huan came to a similar realization. As a young soldier, he looked through the trees at the Americans after a bloody battle, and he had the sudden sense of our shared humanity: "I witnessed Americans dying. Even though I didn't know their language, I saw them crying and holding each other. When one was killed, the others stuck together. They carried away the body, and they wept. I witnessed such scenes and thought, 'Americans, like us Vietnamese, also have a profound sense of humanity.' They cared about each other. It made me think a lot."[7]

A Blueprint for a Good Society

Where does this cross-cultural similarity come from? How can people be so different from—even go to war with—one another and yet also be so similar? The fundamental reason is that we each carry within us an evolutionary blueprint for making a good

society.

Genes do amazing things inside our bodies, but even more amazing to me is what they do *outside* of them. Genes affect not only the structure and function of our bodies; not only the structure and function of our minds and, hence, our behaviors; but also the structure and function of our societies. This is what we recognize when we look at people around the world. This is the source of our common humanity.

Natural selection has shaped our lives as social animals, guiding the evolution of what I call a "social suite" of features priming our capacity for love, friendship, cooperation, learning, and even our ability to recognize the uniqueness of other individuals. Despite all the trappings and artifacts of modern invention—our tools, agriculture, cities, nations—we carry within us innate proclivities that reflect our natural social state, a state that is, as it turns out, primarily good, practically and even morally. Humans can no more make a society that is inconsistent with these positive urges than ants can suddenly make beehives.

I believe that we come to this sort of goodness just as naturally as we come to our bloodier inclinations. We cannot help it. We feel great when we help others. Our good deeds are not just the products of Enlightenment values. They have a deeper and prehistoric origin.

The ancient tendencies that form the social suite work together to bind communities, specify their boundaries, identify their members, and allow people to achieve individual and collective objectives while at the same time minimizing hatred and violence. For too long, in my opinion, the scientific community has been overly focused on the dark side of our biological heritage: our capacity for tribalism, violence, selfishness, and cruelty. The bright side has been denied the attention it deserves.

CHAPTER 1

The Society Within Us

After World War II, when my mother, an ethnic Greek raised in Istanbul, was a little girl, she spent her summers on the island of Buyukada, a short ferry ride from the coast. Many years later, in 1970, she took her children to visit. The Greeks had always called the island Prinkipos (the Princes' Island) and resented its Turkish name. The place had changed little since Leon Trotsky went into exile there in 1929. Then, as now, it did not allow motorized transport, and people got around on foot, on donkeys, or in horse-drawn carriages that slipped on the cobblestones. In 1970, it had been two decades since my mother had been there because she and her parents, like other minorities, had been driven out of Turkey in the 1950s during a period of substantial interethnic strife.

My younger brother, Dimitri, and I were only eight and six, and although we could speak Greek, we could not speak Turkish. Still, we ventured out and found a dozen boys with whom to play. In the pine-covered hills behind my grandfather's abandoned time capsule of a house, with its wood-fired water heater and blistered green shutters, we boys initially organized ourselves into a large group, working together to explore the terrain and communicating, via pantomime, the urgent necessity of accumulating large piles of pinecones. Eventually—inevitably—we decided to split into two teams and engage in combat, lobbing cones at each other and attempting to steal them via furtive raids. A simple market economy emerged in parallel with the brigandage: small green cones that were easier to throw were exchanged for enormous beautiful cones with brittle, exploding petals that we imagined were grenades. Since our ordnance was not destroyed upon being fired, each attack fueled the opponents' supply of weapons. The games—with their petty warfare, barter economy, group solidarity, and occasional cheating—lasted hours.

The Turkish boys were different from my brother and me in some ways, of course. They had shorter haircuts and wore vests. They threw their pinecones sideways from the hip rather than overhand across the shoulder, as we did. And they knew the terrain better. But these differences seemed minor and were easily ignored. The social play in which we engaged was wordlessly comprehended by all. Separated by a significant cultural and linguistic distance, we were able to jointly create a little social order with familiar features that we all enjoyed.

One purpose of play is for children to ape adult behaviors and practice grown-up roles. But play is not just about children being taught, explicitly or implicitly, to act like adults. In many forager societies, adults leave children to play by themselves, and they are often only vaguely aware of what their children are up to. Play arises spontaneously, without any guidance. And play like this—a purely voluntary, intrinsically motivated, and eminently enjoyable experience—very often involves the "experiments in social living" that my Turkish friends and I pursued on the island.[1]

Here is one anthropologist's description of a long-term playgroup consisting of thirteen children in Ua Pou in the Marquesas Islands. The children, who ranged in age from two to five years old, were observed every day for several months playing for prolonged periods without adult supervision in an area near the beach (a spot with "strong surf" and "sharp lava-rock walls" as well as "machetes, axes, and matches" nearby for good measure). They "organized activities, settled disputes, avoided danger, dealt with injuries, distributed goods, and negotiated contact with passing others—without adult intervention."[2] A more systematic set of landmark longitudinal studies of play in places around the world (Nyansongo, Kenya; Khalapur, India; Juxtlahuaca, Mexico; Tarong, Philippines; Taira, Japan; and "Orchard Town," a pseudonym for a town in New England), spearheaded by anthropologists Beatrice and John Whiting and their colleagues from the mid-1950s to the mid-1970s, concluded that, while there was much notable variation by gender, age, and culture in children's typical companions, activities, toys, and venues for play, children's *social* behavior and interaction styles while playing were always extremely similar.[3]

Societies themselves might even be seen as just scaled-up versions of such children's games. In *Homo Ludens*, the classic 1938

book about humans and play, social historian Johan Huizinga goes so far as to argue that "human civilization has added no essential feature to the general idea of play."[4] Children's behavior often involves innately making a kind of miniature and temporary society. From an early age, humans cannot help themselves.

Child's Play

Looking back more than forty years later, I can see that the games my brother and I played with the Turkish boys involved a high degree of social organization with features I have since come to recognize by technical terms: *in-group favoritism, trade complementarity, social hierarchy, collective cooperation, network topology, social learning,* and *evolved morality.*

I have my own laboratory now, but I am still playing with and thinking about these sorts of things. My group has devised specialized software to recruit thousands of adults from around the world and then to track their behavior as they participate in miniature societies that we create online. I manipulate the social interactions in these societies—for instance, randomly assigning people to be rich or poor or surreptitiously dropping in programmable robotic agents who pretend to be real people to see what mischief they cause—in order to peer more deeply into the origins of human social living and to understand where cooperation, cohesion, hierarchy, and friendship come from. My group also explores the evolutionary biology of these phenomena, searching for the ancient origins of social life even as we concoct thoroughly modern examples.

One of the more dispiriting phenomena that we have observed is the in-group favoritism mentioned above—that is, people's preferences for their own groups. It's that warm feeling of belonging to a team that I experienced on Buyukada. In-group favoritism is seen even in preschool children, and many researchers have explored whether this preference is innate. In one experiment, five-year-old children were given T-shirts of different colors (red, blue, green, orange) and then shown pictures of other children wearing T-shirts of the same or different color as their own. The children understood that their shirt colors were randomly assigned. And there was indeed no specific difference among the children in the photographs other than their shirt

colors. Still, the children preferred the kids wearing the same T-shirt color; they allocated more of a scarce resource (toy coins) to them; and they reported more positive thoughts about them.[5] They also felt that the kids in their shirt-color group would be more likely to be kind and share toys. And they were better able to remember and recall positive actions of their in-group, encoding favorable information describing those of their own type. All this arose simply because of randomly assigned T-shirt colors. Other studies of in-group bias at even younger ages, at three or five months, further support its innateness.[6]

But this is not the only socially relevant sensibility that we are born with. Humans also appear to have a rudimentary moral sense from birth. And, like the construction of the whole of Euclidean geometry from its few axioms, our inborn moral principles provide a foundation for social behavior that is only later shaped by experience and education.

For instance, psychologist Paul Bloom and his colleagues have documented sensitivity to fairness and reciprocity—which are crucial for cooperation—in babies as young as three months old, using a variety of ingenious experiments.[7] In one experiment, three-month-old babies were shown a blue square "helping" a red circle up a hill and a yellow triangle pushing the circle down. The babies reliably chose the blue square when given a choice (colors and shapes were varied to be sure that those features were not driving the preferences).[8] In other experiments, babies could tell the difference between puppets who helped or hindered actions attempted by other puppets. Babies preferred the good guys, and they disliked the jerks. Still other experiments involving puppets showed that thirteen-month-old babies have a "theory of mind," meaning that they have an understanding of the mental states (knowledge, beliefs, intentions) of others, which is obviously crucial for moral reasoning and helpful for social life.[9] In another set of experiments, toddlers spontaneously and without any prompting helped adults who were pretending to struggle with opening a cabinet.[10] In short, at a very young age, humans appear pre-wired (in the sense of having a strong, innate proclivity) to interact in positive ways, with insight into the intentions of others and with a tendency to care about being fair. It is hardly surprising, therefore, that, although details vary from place to place, every society values kindness and cooperation, defines acts

of cruelty, and categorizes people as either virtuous or nasty.

Why are humans this way? Why, even from birth, do we manifest such consistent, socially relevant behaviors? Where do the social principles that guide children's play and shape adult lives come from? And how do humans in every society come to create a similar kind of social order with important and familiar features that are universally regarded as good?

Cultural Universals

It's easy to lose sight of what human societies have in common because, when we look around the planet, we see such wondrous and compelling diversity in technology, art, beliefs, and ways of life. But focusing on the differences among societies obscures a deeper reality: their similarities are greater and more profound than their dissimilarities.

Imagine studying two hills while standing on a ten-thousand-foot-high plateau. Seen from your perch, one hill appears to be three hundred feet high, the other nine hundred feet. This difference may seem large (after all, one hill is three times the size of the other), and you might focus your attention on what local forces, such as erosion, account for the difference in size. But this narrow perspective misses the opportunity to study the other, more substantial geological forces that created what are actually two very similar mountains, one 10,300 feet high and the other 10,900 feet.

In other words, what you see depends on where you stand. And very often, when it comes to human societies, people have been standing on a ten-thousand-foot plateau, letting the differences among societies mask the more overwhelming similarities. Extending the metaphor, consider how specifically human activities, such as farming and mining, reshape the landscape. These human actions might modify the details of the appearance of the hills, but they do not fundamentally change the mountains themselves—their origins relate to deeper forces outside of human control. The same might be said of human culture: it reshapes certain aspects of human social experience, but it leaves many other features solid as a rock.

A broader perspective helps us appreciate this. Astronauts—who are not chosen for their sentimentality—very often come to appreciate how trivial human differences really are. Cosmonaut

Aleksandr Aleksandrov put it this way: "We were flying over America, and suddenly I saw snow, the first snow we ever saw from orbit. I have never visited America, but I imagined that the arrival of autumn and winter is the same there as in other places, and the process of getting ready for them is the same. And then it struck me that we are all children of our Earth." When Donald E. Williams, a space-shuttle commander, saw the blue orb suspended in the darkness of space, he observed: "The experience most certainly changes your perspective. The things that we share in our world are far more valuable than those which divide us."[11]

Most experiences that induce such a sense of awe prompt us to feel as if we are transcending our usual frame of reference. Some scientists believe (though it is hard to prove) that awe is an evolved emotion intended to cause a cognitive shift that reduces egocentricity and makes people feel more connected to others. Responding to powerful natural phenomena—like thunderstorms or earthquakes or vast expanses of ice or desert—with a loss of selfishness and an increase in group bonding might have had survival value to ancient humans. A key feature of awe, psychologists Dacher Keltner and Jonathan Haidt have argued, is that it quiets self-interest and makes individuals feel part of the larger whole.[12] According to primatologist Jane Goodall, chimpanzees experience something similar—they can be amazed by things outside themselves and gaze dreamily at waterfalls and sunsets—which suggests a possible evolutionary origin for this feeling.[13]

Still, the perspective of the few souls who have ventured into space notwithstanding, there is a long history of ferocious arguments between those who think there are cultural universals that bind humanity together and those who think that the sheer variety in human experience means that no traits can be truly constant. *Culture* may be defined as the whole set of ideas (and artifacts) produced by a group, ideas that are usually transmitted socially and that are capable of affecting individual behavior. Cultural universals are traits shared by all peoples around the world. The traits' very universality suggests that they were likely shaped by evolution. For example, the fact that people are uniquely identified in every culture (almost always through the use of personal names) suggests that there is something fundamental about personal identity.[14]

Some critics believe that claims about cultural universals are both scientifically and morally suspect. The search for universals is seen as problematic because it would seem to impose standard categories (often Western ones) on all people, and thus it is seen as disrespecting, rather than just looking beyond, human diversity. Some fear that accepting the reality of any particular cultural universal might allow observers to have a position from which to judge alien cultural practices and label them as aberrant.

Some extreme critics see even a single exception to a claimed universal as negating its universality. But universal capacity is not the same as universal expression. And these critics typically overlook the fact that exceptional cases usually have required tremendous pressure to reshape the natural order. For example, there is (as far as we know) only one society in the world—the Baining people of New Guinea—that manages to suppress the innate tendency to play. But this does not mean that Baining children are not pre-wired for play. In fact, subverting the natural urge to play requires a great deal of cultural force, with the Baining adults devaluing play and actively discouraging children who attempt it.[15]

The debate about universals also evokes broader tensions in the sciences. The most famous tension, to which we shall return, revolves around the relative contributions of nature and nurture as explanations for human experience. Those advocating for the existence of universals are generally seen as belonging to the nature camp. Another tension arises between "lumpers" and "splitters." Lumpers seek to group similar things together; splitters identify fine distinctions in the natural world.[16] Still another tension is between those focusing on the average tendency of a phenomenon (such as the average price of a house in a market) and those interested in its variation (for instance, the range of house prices and the forces that contribute to inequality in prices from place to place). But these different agendas—searching for consistency or studying variation—should be seen as complementary, rather than opposing, ways of studying natural phenomena, including our species, scientifically.

In the first half of the twentieth century, social scientists such as Émile Durkheim, Franz Boas, Margaret Mead, and Ruth Benedict held that culture could not be explained by psychological or inherited biological traits. Culture was seen as something deliberately and thoughtfully produced by humans and not

reducible to deeper causes.[17] In the 1970s, cultural anthropologist Clifford Geertz argued that, while underlying universals did exist, they were uninteresting in comparison to the variegated ways in which such traits found expression. The degree of abstraction required to identify universals was too great to be of use, he felt.[18] At best, human nature provided an undifferentiated and extremely malleable raw material that was of negligible importance.[19] Hence, in this line of thought, cultural variation was the central focus of scientific inquiries.

Other social scientists have held different views. In 1923, anthropologist Clark Wissler described a "universal pattern" of cultural features, and he proposed that these universals—related to speech, food, shelter, art, mythmaking, religion, personal interactions, and attitudes toward property, government, and war—were rooted in human biology. In 1944, the famous anthropologist Bronislaw Malinowski also discussed the dependence of culture on the "organic needs of man," matching a set of basic needs (such as safety, reproduction, and health) with respective cultural responses (such as protection, kinship, and hygiene).[20]

In his 1945 essay "The Common Denominator of Cultures," anthropologist George Murdock offered an alphabetically ordered "partial list" of universals that was, in actuality, exhaustive and alarmingly detailed (and, in my opinion, tedious and arbitrary). It included everything from personal adornment to sports activities, dream interpretation, sexual practices, soul concepts, and even weather control. Murdock conceived of these universals as being specifics of *classification*, rather than content. In other words, while the precise details of human behavior in any of these domains might differ from place to place, they constituted a common foundation that was rooted in "the fundamental biological and psychological nature of man and in the universal conditions of human existence."[21]

In 1991, anthropologist Donald Brown challenged what he described as the broad taboo against the search for universals in the field of anthropology. He outlined the three broad mechanisms by which cultural features could have become universal: (1) they might have started in one place and diffused widely (like the wheel); (2) they might reflect commonly discovered solutions to challenges that are imposed by the environment and that all

humans face (such as the need to find shelter, cook food, and ensure the paternity of offspring); and (3) they might reflect innate features common to all humans (such as the appeal of music, the desire to have friends, or the commitment to fairness). Some universals, although not all of them, must be a product of our evolved human nature.[22]

In a detailed description of a hypothetical "Universal People," Brown enumerated dozens of surface-level linguistic, social, behavioral, and cognitive universals, similar to Murdock's long list, that have been noted by ethnographers:

> In the cultural realm, human universals include myths, legends, daily routines, rules, concepts of luck and precedent, body adornment, and the use and production of tools; in the realm of language, universals include grammar, phonemes, polysemy, metonymy, antonyms, and an inverse ratio between the frequency of use and the length of words; in the social realm, universals include a division of labor, social groups, age grading, the family, kinship systems, ethnocentrism, play, exchange, cooperation, and reciprocity; in the behavioral realm, universals include aggression, gestures, gossip, and facial expressions; in the realm of the mind, universals include emotions, dichotomous thinking, wariness around or fear of snakes, empathy, and psychological defense mechanisms.[23]

These fundamental categories of universals are clearly important, and they come into relief when we step off the ten-thousand-foot plateau and move to lower ground.

Variations in seemingly disparate cultural traits may be connected. For example, societies with alphabets have more complex religions than those without. Such a pattern of correlated traits suggests that there is indeed a deeper organizing force that shapes the complexity of human societies, and this has been documented by a study of 414 societies spanning ten thousand years from thirty regions around the world.[24] Many key features of human societies are functionally related; they are not independent; they coevolve in predictable ways; and a single underlying metric can be used to capture them. Methodologically,

this is similar to the way that the single underlying metric of expense might explain why disparate features of a car (its acceleration, safety, instrumentation, and amenities) go together.

The evidence for innateness in multiple aspects of human experience has been building across many domains. Psychologist Paul Ekman has proposed a universal connection between core emotions and many facial expressions—particularly for happiness, anger, disgust, sadness, and fear—and suggested an evolutionary basis for them.[25] Such expressions are innate, even if their exact manifestations upon the human face can sometimes be culturally shaped.[26] The study of the universal features of language, championed by linguist Noam Chomsky, psychologist Steven Pinker, and others, provides another fertile area for discerning universals.[27] And ethnomusicologists have verified another category of cultural universal: musical forms.[28] A sample of three hundred and four musical recordings from around the world yielded numerous "statistical universals" (meaning there were few exceptions to the patterns) across nine geographic areas; these spanned features related to pitch and rhythm as well as performance style and social context.

These musical universals may be so fundamental that even other species manifest them; for instance, cockatoos make music by drumming with rhythms similar to our own.[29] Moreover, music's function—whether in birds, elephants, whales, or wolves—may be deliberately social. This observation regarding the appearance of human universals in other species is itself a very powerful idea. If a phenomenon (like friendship or cooperation, for example) is present in our species and also in others, then that phenomenon is an especially good candidate for a universal across groups *within* our own species. If we share a trait with animals, then we can surely share it widely with one another.

Still, the problem with many inventories of universals is that they often seem more like exhaustive lists of features that cultures *can* include rather than a core set of items that cultures *must* include. The latter is my concern here. In addition, I focus on those universal features that are specifically *social* in nature, that have to do with how groups of people function. And, finally, I am interested in universals that have evolutionary rather than ecological origins. That is, I am focused on universals that are encoded in our genes rather than those that have arisen

(independently, in multiple locations) simply as an immediate response to the environment the humans are in (for instance, the potentially universal presence of fishing nets in cultures exploiting rivers and seas for food). In this regard, an evolutionary perspective obliges us to focus on traits that evolution can actually act on. The practice of medicine is not something encoded in our genes, even if virtually every society has a tradition of healing, but a desire for health and survival (both in ourselves and in those we love) and also the motivation of one person to help another are indeed hardwired within us.

My own list of universals is thus more focused and more fundamental than these prior efforts. Centered on a crucial set of specifically social features, it is related to why humans make what we believe are good societies. It is derived, the evidence will show, from our species' evolutionary heritage. And it is, at least partially, encoded in our genes. I call this list of universals the *social suite*.

The Social Suite

Human societies are so vibrant, complex, and encompassing that they take on lives of their own. They may seem to be built by others, by powerful people, or by historical forces beyond human comprehension. In the 1970s, when I was a child, some people were so impressed by the apparent sophistication of ancient civilizations in Egypt and the Americas that they fantasized that aliens must have fashioned them. But human societies do not come from somewhere else. They come from within us.

The capacity to band together to make societies is indeed a biological feature of our species, just like our ability to walk upright. This innate capacity—so rare in the animal kingdom—has also made possible what evolutionary biologist E. O. Wilson has called "the social conquest of earth."[30] It's not our brains or brawn that allows us to rule the planet. And, like other behaviors that have helped our species to survive and reproduce, the human ability to construct societies has become an instinct. It is not just something we *can* do—it is something we *must* do.

At the core of all societies, I will show, is the social suite:

(1) The capacity to have and recognize individual identity
(2) Love for partners and offspring

(3) Friendship
(4) Social networks
(5) Cooperation
(6) Preference for one's own group (that is, "in-group bias")
(7) Mild hierarchy (that is, relative egalitarianism)
(8) Social learning and teaching

These features arise from within individuals but they characterize groups. They work together to create a functional, enduring, and even morally good society.[31] Individual identity provides a foundation for love, friendship, and cooperation, allowing people to track who is who across time and place and to faithfully repay kindness offered by others. Love is a particularly distinctive human experience (built on a trait seen in only a few other mammals, namely, the practice of bonding with mates). Love also paves the way, evolutionarily speaking, for us to feel a special connection not only to our kin, but also, ultimately, to unrelated individuals. That is, humans have friends, and this, too, is a crucial part of the social suite. We form long-term, nonreproductive unions with other humans. This is exceedingly rare in the animal kingdom, but it is universal in us. As a consequence of having friends, we assemble ourselves into social networks, and here, too, the particular ways we do this are universal. The mathematical patterns of friendship are the same around the world. Humans everywhere also cooperate with one another. And this cooperation is supported not only by the fact that we reliably interact with friends rather than strangers within the face-to-face networks we fashion, but also by the fact that we form groups whose boundaries we enforce by coming to like those within the group more than those outside of it. People everywhere choose their friends and prefer their own groups. In turn, cooperation is a crucial predicate for social learning, one of our species' most powerful inventions. No human has to learn everything on his or her own; we can all rely on others to teach us, a hugely efficient practice present in all cultures. And friendship networks and social learning, finally, set the stage for a kind of mild hierarchy in humans in which we accord more prestige to some group members—typically, those who can teach us things or who have many connections—than to others.

These features relate to banding together, and they are highly

useful for survival in an uncertain world, offering us ways to acquire and transmit knowledge more efficiently and allowing us to pool risk. These traits are evolutionarily rational, in other words, enhancing our Darwinian fitness and advancing our individual and collective interest. By endowing us with social sensibilities and behaviors, our genes help to shape the societies we make on both small and large scales.

This manufactured social environment in turn creates a feedback loop across evolutionary time. Throughout history, humans have lived surrounded by social groups, and the presence of our fellow humans—people we must interact with, cooperate with, or avoid—has been as powerful as any predator in shaping our genes. Evolutionarily speaking, our social environment has shaped us as much as we have shaped it. Moreover, although the physical, biological, and social environments have all been pivotal in our evolution, they differ in one substantial respect. Aside from the (hugely important) mastery of fire over a million years ago, it is only in the past few thousand years that humans have been able to significantly shape their physical and biological environments—by damming rivers, domesticating plants and animals, generating air pollution, using antibiotics, and so on. Prior to the invention of agriculture and cities, humans did not build their physical environments; they simply chose them. By contrast, humans have always made their social environments.

Living socially places special demands on us, and many cognitive capacities and behavioral repertoires evolved in order for us to cope. For example, we are innately equipped to cooperate, and living in cooperative groups favors certain genetic predispositions related to kindness and reciprocity. We are wired to have friends, not just reproductive partners, and when we form friendships, we modify the social world around us in a way that makes friendliness useful. Individuals lacking these prosocial capacities are not as successful in their efforts to survive and reproduce as others. Our genes guide us to create a social environment that feeds back and favors particular kinds of genes that are useful in the environments we have created. Over evolutionary time, for this reason too, humans have genetically internalized universal social axioms.

Core features of human societies are guided by a *blueprint* that our species has helped to sketch over eons. Some evolutionary biologists bristle at the metaphor of a blueprint.[32] The reason for

this is partly that they consider blueprints to be fixed and deterministic. Another issue, though, is that if you construct a building based on a set of plans, someone else can inspect that building and then work backward to create its blueprint, whereas with the genetic code that provides instructions for an organism, no one can inspect the organism and then easily work backward to the code. You can go in both directions with a blueprint but in only one direction with genetic code. As a result, these scientists prefer metaphors like programs or recipes, but one can indeed make some predictions about a recipe by inspecting a prepared food. And in any case, one cannot always re-create the exact original blueprint from inspecting a building. Blueprints are not necessarily fully realized or even complete. They are open to interpretation. Though blueprints are specific guidelines, they can be modified—revised by the architect, interpreted by the builder, or changed by the occupants.

More important, from the point of view of using this sometimes controversial metaphor, when I use it here, I do not mean that genes *are* the blueprint. I mean that genes act to *write* the blueprint. A blueprint for social life is the product of our evolution, written in the ink of our DNA.

Our evolutionary past compels us universally to make a basic, obligatory sort of society. This blueprint also means that societies have some shapes that they *cannot* assume and some constraints that they must observe, both of which we will explore. Humans can deviate from the blueprint—but only up to a point. When they deviate too much, as we will see, society collapses.

What Unites Us

Cross-cultural variations in traits and behaviors have attracted tremendous interest for a long time, and these variations have often been used in a deplorable way to justify disdain for, or oppression of, "outsiders." These cultural variations are sometimes linked to observations about genetic variations in human physical traits (such as different types of hemoglobin, which can confer benefits such as tolerance of high altitudes or resistance to malaria).[33] This might make it seem reasonable to search for genetic causes for variation in cultural practices, and there is some limited evidence for this with respect to traits such

as violence, novelty seeking, risk aversion, and migratory behavior.[34] But genes surely explain very little of the variation among cultural groups in the long lists of traits propounded by anthropologists. There are no genes for surgery or idolatry that explain why some societies cut people open or make images of gods. Such variation is due to culture.

Nevertheless, even if our genes do not explain cultural *variation,* they can explain cultural *universals*. Moreover, genes can explain why culture exists at all. Evolution provides the underlying foundation for human culture by equipping us with the ability to cooperate, make friends, and learn socially. We manifest cultural variation precisely because we evolved to have this capacity in the first place.

When some scientists describe the evolutionary basis of behaviors, whether at the individual or societal level, they often focus on the differences between humans that can divide and even fracture us. But when I speak of a blueprint, my interest here is altogether different. I am not saying that *differences* across societies are based on our genes. Rather, I am saying that the *similarities* across societies—instantiated in the social suite—are based on our genes.

I am interested in the deep social features all humans share, in where these features came from and what biological and sociological purpose they serve, and in how they continue to shape our societies no matter the cultural details. A relatively small set of universal features supports the self-assembly of humans into societies. If we took groups of people from anywhere on the planet and let them form societies on their own, without any formal guidance or authority, what would they do?

CHAPTER 2

Unintentional Communities

Most social scientists would leap at the chance to conduct a series of experiments resembling what BBC television producers organized for the reality program *Castaway 2000*. The show filmed thirty-six people (including couples and families) who were stranded together on an uninhabited island for one year, the goal being to "find out what happens when a cross-section of British try to create a new society."[1] The challenge the group faced was to build a cohesive, sustainable, and functioning community from scratch. Newspapers around the world breathlessly hailed the show as "a bold social experiment for the new millennium."[2]

Of course, the program's artificiality shaped the decisions and behaviors of the castaways. But still, many of the participants themselves noted that, in their eyes, the project was primarily a scientific experiment. "This is going to sound incredibly naive," participant Julia Corrigan later explained, "but we were blissfully unaware at first of the importance of the filming of the project, especially in the very early days. When we were at application stage, the emphasis seemed to be fully on the 'social experiment' side of things."[3]

Plucked from their lives and planted on the small, remote Scottish island of Taransay, these thirty-six people were required to cultivate their own food, raise their own animals, maintain their own shelters, and organize and run an effective community. Upon arrival, they were assigned pods to live in, allowed a crate of personal items, and given a few weeks' supply of food to last them until their crops grew. Everything else was in their hands. Ron Copsey, one of the participants, later summarized the initial stages of building their community:

> Most of the early days were spent getting to know each

> other and having endless meetings about how we were to live on Taransay. Many [arguments] ensued regarding the work rota and how to spend the community budget—even some punch-ups between some of the men.[4]

Twenty-nine of the participants stayed the course, developing an affinity for one another and for Taransay, but seven people (three individuals and one family of four) voluntarily left the island for various reasons.[5] Copsey, one of these seven, summed up his feelings about the experiment:

> We were given a wonderful opportunity to live differently, and all we did was replicate how we lived at home: people wanted rules, cliques, some kind of permanent, secure structure. It was disappointing that the Taransay community appeared to reflect society.[6]

Why did Taransay turn out to resemble regular society so closely? Why were the participants unable to create something new despite their desire to do so?

In an ideal world, researchers would conduct the Taransay experiment multiple times over sustained periods and with real scientific rigor. But it is hard to imagine how to actually do this, given the logistical and ethical impediments. One possibility is to conduct such experiments on a smaller scale. My lab has developed one way of doing this online over short periods and with simplified types of interactions. Another possibility would be to examine the fascinating history of *intentional* small-scale efforts to make society anew. Many times over the past few centuries, groups of people—motivated by utopian, philosophical, or religious visions or by practical exigencies—have voluntarily set themselves apart in order to form a different kind of community. These familiar utopian strivings have especially strong roots in the United States, which has a history rich in communal groups (think of the Puritans and the Shakers and, in more recent times, the communes of the 1960s). Still another way to study the development of societies would be to examine *unintentional* efforts to create social order from scratch, such as by shipwrecked sailors who found themselves facing the challenge of working together to make a functional community in order to survive.

We will explore these different angles in the chapters to come, but it's worth noting right now that the most striking feature of these advertent and inadvertent occurrences is their thoroughly predictable outcome. Most efforts to form societies with radically different rules either collapsed altogether or, like Taransay, came to resemble the society from which they originated. Despite the extraordinary and uniquely human capacity for innovation, illustrated by the great variety of cultures around the world and the unending social changes everywhere, human beings are drawn to some fundamental and universal principles—namely, the social suite. Attempts to abrogate these principles typically end in failure.

Natural Experiments

Before we delve into people's spontaneous efforts to fashion societies, let's consider what large-scale experiments with social systems might look like, at least in scientists' dreams. Scientists might want to describe all possible types of societies, being as imaginative as science fiction authors, and then do experiments with real people placed into these societies in order to see which ones "worked" according to some definition they would specify—like whether the inhabitants were happy or avoided fratricide. Some variations on this type of idea are feasible. Scientists can systematically manipulate social arrangements and observe the effects on people and groups in the short term (as we will see in chapter 4), and they can deliberately manipulate the social organization of other social species by, for instance, removing a leader from a macaque monkey troop (an experiment we will discuss in chapter 7).

A different kind of experiment directed at exploring humans' inborn propensity to make societies might involve raising children without any cultural exposure at all in order to see what sort of society they create as adults. Such a conceit has been imagined for a very long time by people eager to understand the origins of language. It's called the "forbidden experiment," in fact, because it would be patently cruel and immoral.[7] According to Herodotus, the Egyptian pharaoh Psamtik I (who ruled from 664 to 610 BCE) gave two newborn babies to a shepherd to raise without language in order to discover whether they would speak on their own. He

was not the only king with that idea. Frederick II (1194–1250), James IV of Scotland (1473–1513), and the Mogul emperor Akbar (1542–1605) allegedly attempted the same experiment.[8] The exercise has also been central to science fiction stories, like the 1960 classic "The First Men."[9]

Another hypothetical experiment might be to introduce mutations into genes related to social activity (for instance, genes that regulate how people choose their friends) and then see how populations of such mutated humans interact. Might people with different genes build different sorts of societies? Conducting genetic experiments with humans is obviously impossible, although, as we shall see in chapters 6 and 10, such experiments are possible with rodents.

But I am unaware of any scientific experiments in which whole, complex social systems involving humans are created for sustained periods along with control groups and different "treatments"—an experimentalist's term of art that means deliberate modifications of the conditions to which subjects are exposed.

Given the restrictions on experiments with human groups, it is very difficult to gather data on societies that humans build from scratch. However, at various times and places in history, there have been *natural experiments* that have approximated this. In these situations, communities of people have been thrust together accidentally or deliberately, albeit without explicit scientific manipulation. To what extent did groups like stranded sailors or self-isolating utopian sects wind up reproducing the crucial aspects of the societies from which they fissioned? And to what extent were they capable of realizing a new form of social organization in a sustained way? Did their success or failure have anything to do with how they lived, socially speaking? Before considering what such examples teach us, let's think about why experiments—whether of the deliberate or natural variety—are helpful at all.

Suppose some doctors believe they understand the physiology of a disease and want to see if a certain new drug is helpful in treating the disease. They administer the new drug to some patients and observe that people who take the drug are more likely to die. They might be tempted to conclude that the new drug is harmful. But perhaps they chose to give the drug only to relatively sick people, and, of course, sicker people are more likely to die,

regardless of the medication they take. So, if only sicker patients are given a drug, how can scientists know whether it is helping or harming the patients? They would need a group of similarly sick patients who were *not* given the drug as a comparison. Furthermore, it's possible the doctors could have the opposite problem. Maybe they chose to give the new drug only to relatively young, healthy patients. This approach might make the drug seem *safer* than it is. The best way to ensure that health, age, and other factors are not confounding the scientists' assessment of the efficacy of the drug is to *randomly* assign a pool of patients so that some get the drug and some do not and then compare the outcomes in both groups. This type of experiment—in which exposure to the drug is controlled by the scientists, thus minimizing the impact of extraneous factors—is the gold standard of scientific research.

Science encompasses diverse practices, and the role of experiments remains paramount.[10] Still, experimentation should not be conflated with the scientific method in general. The *scientific method,* widely practiced by scientists since the seventeenth century, refers to a way of studying the natural world; it is characterized by systematic observation, careful measurement, and, *sometimes,* actual experimentation, all of which is coupled with the formulation, testing, and revision of hypotheses. There are many situations in which scientists cannot do experiments, and not just in fields like astronomy and paleontology. For example, we cannot experimentally assess whether the loss of a spouse increases a person's risk of death (known as the widowhood effect, or "dying of a broken heart") because we cannot kill or randomly remove people's spouses! Nor can we experimentally evaluate what tobacco exposure does to humans by randomly assigning people to be smokers, as we already know that it's deadly. In such circumstances, scientists resort to other, statistical approaches to find answers.

In addition, scientists can take advantage of what are known as *natural experiments*, where the treatment has been assigned to different groups of subjects by outside forces, seemingly by chance. Natural experiments can sometimes very closely approximate real experiments. For instance, in the 1980s, there was a debate about whether military service increased or decreased soldiers' wages after they left the service. Or perhaps any effect simply had to do with who signed up. Were men who

enlisted more capable than men who did not enlist? Or did men sign up to serve because they had few skills or job prospects? Taking into account the qualities of those who had enlisted, did service in the military harm men financially or not? In an ideal experiment, we would randomly assign men to serve in the army and then examine their wages some years after discharge. In reality, this is not possible. But economist Joshua Angrist used the natural experiment of the 1970s-era Vietnam draft lottery instead, and he showed that serving in the army reduced subsequent earnings.[11]

Historians, biologists, archaeologists, and diverse social scientists have used natural experiments to study everything from the long-term impact of British colonial institutions in India to (famously) the evolution of beak morphology in Darwin's finches on the various Galápagos Islands.[12] Natural experiments vary a lot, however, in the extent to which the experimental treatments really are randomly assigned (as was the case in the military draft example). Randomization in most natural experiments is rarely so perfect.

However, the key idea is always that the treatment is assigned by some force other than the scientist and in a manner that does not predict the outcome. In one natural experiment, economist Daron Acemoglu and his colleagues concluded that the parts of Germany that were invaded by the French army following the French Revolution were quicker to abandon feudal governance.[13] These same regions in Germany then went on to experience greater prosperity and greater urbanization in subsequent centuries. This sort of natural experiment helps shed light on how social institutions and practices affect diverse economic outcomes in a way that simply is not otherwise possible. Researchers clearly could not randomly assign different regions of Europe to have different forms of government in order to study how this affects their economies over the following decades. A scientist could never do that. But the French army could.

Natural experiments allow scientists to circumvent practical impediments, mitigate ethical obstacles (like killing spouses), and study large-scale phenomena that are impossible to replicate (such as the effects of military invasions). Still, researchers cannot always be sure that interventions are truly allocated by chance. Maybe the French army specifically chose to invade certain parts

of Germany that were somehow destined to be more prosperous in the future!

Natural experiments with social order can take many forms. Let's start by considering people stranded in remote places.

An Archipelago of Shipwrecks

Survivor camps established after shipwrecks provide fascinating data about the societies that groups of people make when it's left up to them, about how and why social order might vary, and about what arrangements are the most conducive to peace and survival. An archipelago of shipwrecks, formed over centuries, more or less at random, has resulted in people participating, unintentionally, in multiple trials of this experiment.

Shipwreck survivors have had a special hold on the human imagination for thousands of years, beginning at least since Homer crafted the *Odyssey* and stretching through when Shakespeare penned *The Tempest*, Cervantes described Don Quixote's marooning, and more modern authors wrote *Robinson Crusoe, Swiss Family Robinson,* and *Lord of the Flies.* In fiction, the castaway narrative tends to feature an idyllic state of nature, following Jean-Jacques Rousseau, or a state of anarchy and violence, following Thomas Hobbes—two philosophers with rather conflicting ideas about human nature.

Hobbesian examples abound in real-world shipwreck situations. Consider the crew of the *Batavia*, who in 1629 systematically planned the mass murder of women and children to conserve resources.[14] Or consider the crew of the *Utile*, a French slave ship that wrecked in 1761 on Tromelin Island in the Indian Ocean. The sailors managed to get off the island, but they left behind sixty enslaved persons. They promised to send help but failed to do so for fifteen years. When a ship finally arrived at the island, only seven women and a baby were still alive.[15]

Some shipwrecks reflect a notably dysfunctional, if grimly familiar, breakdown of social order that includes not only murder but also cannibalism (which is not too uncommon). The extreme circumstances of the shipwreck may overwhelm people's innate tendencies to behave well. The wreck of the *Medusa* in 1816 (which left one hundred and forty-six people on a large, unstable raft, only fifteen of whom lived to be rescued thirteen days later) and

the wreck of *Le Tigre* in 1766 (involving four people, three of whom survived for two months) both exhibited murder and cannibalism as survival means.[16] In the case of *Le Tigre*—as described in a book that was an international bestseller in the eighteenth century—special consideration was given to the lone female survivor, and the male survivors made provisions for her protection. The lone black survivor was murdered and cannibalized first, because of his lower perceived status. No such niceties applied in the case of the *Medusa*, where, as far as can be determined, male, female, black, and white survivors all killed and ate one another indiscriminately.

The relationship of cannibalism to the breakdown of social order depends, of course, on the reasons for the cannibalism—whether the individuals involved ate the bodies of those who had already died because otherwise they would have died of starvation themselves (as in a twentieth-century case involving a plane crash in the Andes) or whether people were deliberately murdered.[17] Contemporary readers regarded the two shipwrecks in different lights. *Le Tigre*—ironically, given its fealty to sexism and racism—was seen as a remarkable story of resourcefulness and endurance, while the *Medusa* was held up as the epitome of depravity and animalistic barbarity.

We know about these events because of a quirky literature, marketed to armchair thrill-seekers, of first-person accounts of these disasters. These seem to have peaked in the nineteenth century.[18] The genre had wonderful titles, including:

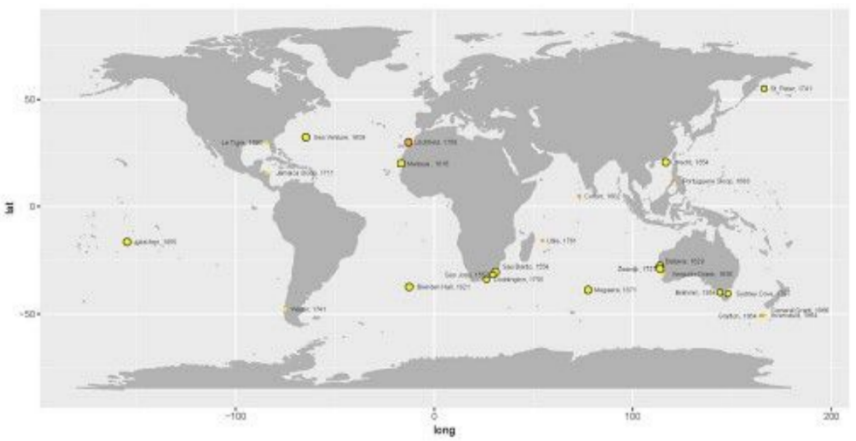
- *Remarkable Shipwrecks, Or, A Collection of Interesting Accounts of Naval Disasters with Many Particulars of the Extraordinary Adventures and Sufferings of the Crews of Vessels Wrecked at Sea, and of Their Treatment on Distant Shores: Together with an Account of the Deliverance of Survivors* (1813)
- *The Mariner's Chronicle Containing Narratives of the Most Remarkable Disasters at Sea, Such as Shipwrecks, Storms, Fires and Famines: Also Naval Engagements, Piratical Adventures, Incidents of Discovery, and Other Extraordinary and Interesting Occurrences* (1834)

And we can supplement these accounts with more formal

evaluations of shipwrecks undertaken by historians and archaeologists in the twentieth century.

During the period of European exploration of the globe, from the sixteenth century through the advent of modern navigation and communications in the twentieth century, there were more than nine thousand shipwrecks. In the great majority of wrecks, all souls were lost to a watery grave. Occasionally, survivors endured at sea in small vessels; for example, the *Essex* went down in 1820, and its crew drifted in narrow whaleboats for weeks, eventually resorting to cannibalism. (Their story inspired Herman Melville to write *Moby-Dick*.) But for our present purposes, we need cases in which survivors made landfall and set up camp, and those are rare.

Figure 2.1: The Shipwreck Archipelago



The locations and dates of twenty-four shipwrecks in the period 1500–1900 CE are shown. Circle symbols indicate the twenty wrecks that are part of the core sample considered here (involving at least nineteen castaways stranded for at least two months); square symbols indicate four further wrecks discussed in the text. Open symbols are shipwreck communities lasting less than one year, and filled-in symbols indicate communities lasting more than one year. Symbol size corresponds to the number of castaways, with small size indicating wrecks with fewer than nineteen people, medium size indicating nineteen to fifty people, and large indicating more than fifty people.

TABLE 2.1 SMALL-SCALE SHIPWRECK SOCIETIES FROM 1500 TO 1900

NAME: CORE SAMPLE: Sao Joao*
YEAR: 1552
INITIAL SURVIVAL COLONY POPULATION: 500
FINAL NUMBER OF SURVIVORS: 21
DURATION: 5 months

NAME: CORE SAMPLE: Sao Bento*
YEAR: 1554
INITIAL SURVIVAL COLONY POPULATION: 322
FINAL NUMBER OF SURVIVORS: 62
DURATION: 2.5 months

NAME: CORE SAMPLE: Corbin**
YEAR: 1602
INITIAL SURVIVAL COLONY POPULATION: 40
FINAL NUMBER OF SURVIVORS: 4
DURATION: 5 years

NAME: CORE SAMPLE: Sea Venture
YEAR: 1609
INITIAL SURVIVAL COLONY POPULATION: 150
FINAL NUMBER OF SURVIVORS: 140
DURATION: 10 months

NAME: CORE SAMPLE: Batavia
YEAR: 1629
INITIAL SURVIVAL COLONY POPULATION: 280
FINAL NUMBER OF SURVIVORS: 190
DURATION: 2 months

NAME: CORE SAMPLE: Utrecht
YEAR: 1654
INITIAL SURVIVAL COLONY POPULATION: 94
FINAL NUMBER OF SURVIVORS: 89
DURATION: 2 months

NAME: CORE SAMPLE: Vergulde Draek*
YEAR: 1656
INITIAL SURVIVAL COLONY POPULATION: 75

FINAL NUMBER OF SURVIVORS: 7
DURATION: 6 months

NAME: CORE SAMPLE: Portuguese Sloop
YEAR: 1688
INITIAL SURVIVAL COLONY POPULATION: 20
FINAL NUMBER OF SURVIVORS: 16
DURATION: 6 years

NAME: CORE SAMPLE: Zeewijk
YEAR: 1727
INITIAL SURVIVAL COLONY POPULATION: 208
FINAL NUMBER OF SURVIVORS: 88
DURATION: 9.5 months

NAME: CORE SAMPLE: Wager***
YEAR: 1741
INITIAL SURVIVAL COLONY POPULATION: 101
FINAL NUMBER OF SURVIVORS: 10
DURATION: 8.5 months

NAME: CORE SAMPLE: St. Peter/Sviatoi Piotr
YEAR: 1741
INITIAL SURVIVAL COLONY POPULATION: 74
FINAL NUMBER OF SURVIVORS: 46
DURATION: 9 months

NAME: CORE SAMPLE: Doddington
YEAR: 1755
INITIAL SURVIVAL COLONY POPULATION: 23
FINAL NUMBER OF SURVIVORS: 22
DURATION: 7 months

NAME: CORE SAMPLE: Litchfield**
YEAR: 1758
INITIAL SURVIVAL COLONY POPULATION: 220
FINAL NUMBER OF SURVIVORS: 220
DURATION: 18 months

NAME: CORE SAMPLE: Utile

YEAR: 1761
INITIAL SURVIVAL COLONY POPULATION: 60
FINAL NUMBER OF SURVIVORS: 7
DURATION: 15 years

NAME: CORE SAMPLE: Sydney Cove
YEAR: 1797
INITIAL SURVIVAL COLONY POPULATION: 51
FINAL NUMBER OF SURVIVORS: 24
DURATION: 5 months

NAME: CORE SAMPLE: Blenden Hall
YEAR: 1821
INITIAL SURVIVAL COLONY POPULATION: 82
FINAL NUMBER OF SURVIVORS: 70
DURATION: 4 months

NAME: CORE SAMPLE: Brahmin
YEAR: 1854
INITIAL SURVIVAL COLONY POPULATION: 41
FINAL NUMBER OF SURVIVORS: 25
DURATION: 5 months

NAME: CORE SAMPLE: Julia Ann
YEAR: 1855
INITIAL SURVIVAL COLONY POPULATION: 51
FINAL NUMBER OF SURVIVORS: 51
DURATION: 2 months

NAME: CORE SAMPLE: Invercauld
YEAR: 1864
INITIAL SURVIVAL COLONY POPULATION: 19
FINAL NUMBER OF SURVIVORS: 3
DURATION: 1 year

NAME: CORE SAMPLE: Megaera
YEAR: 1871
INITIAL SURVIVAL COLONY POPULATION: 289
FINAL NUMBER OF SURVIVORS: 289
DURATION: 3 months

NAME: ADDITIONAL CASES: Le Tigre (Pierre Viaud)
YEAR: 1766
INITIAL SURVIVAL COLONY POPULATION: 4
FINAL NUMBER OF SURVIVORS: 3
DURATION: 2 months

NAME: ADDITIONAL CASES: Medusa
YEAR: 1816
INITIAL SURVIVAL COLONY POPULATION: 146
FINAL NUMBER OF SURVIVORS: 15
DURATION: 13 days

NAME: ADDITIONAL CASES: Grafton
YEAR: 1864
INITIAL SURVIVAL COLONY POPULATION: 5
FINAL NUMBER OF SURVIVORS: 5
DURATION: 19 months

NAME: ADDITIONAL CASES: General Grant
YEAR: 1866
INITIAL SURVIVAL COLONY POPULATION: 15
FINAL NUMBER OF SURVIVORS: 10
DURATION: 18 months

Some numbers are approximate.

One accounting of more than eleven hundred shipwrecks occurring near Tasmania revealed that only fifteen incidents (1.4 percent) resulted in survivors who established a campsite and stayed in one location for more than a week.[19] Fewer shipwrecks still would involve sufficient survivors or enough time to build some semblance of a small society. Many of the people who made it to land died due to scurvy, malnutrition, exhaustion, or injury soon afterwards. Mortality rates over the course of the disaster typically exceeded 50 percent. We also want situations in which the survivors were left alone and not attacked, enslaved, or incorporated by local groups. And, of course, we need at least one of the survivors to have lived to tell the tale.[20]

For an informative social experiment, we need a group of at least nineteen survivors who set up camp for at least two months.[21] Very few shipwrecks meet those criteria. I was able to

identify twenty such cases between 1500 and 1900 (see table 2.1 and figure 2.1). And measurements of survivor counts and camp duration are often complicated by the extraordinary fact that survivors were sometimes shipwrecked twice—first after the original shipwreck and then after a party set sail to get help only to be shipwrecked somewhere else.

We must acknowledge that, even in these twenty examples that fit our criteria, the survivors are not strictly representative of humanity. The people who traveled on ships were not randomly drawn from the human population; they were often serving in the navy or the marines or were enslaved persons, convicts, or traders. Shipboard life involved exacting status divisions and command structures to which these people were accustomed. Survivor groups were therefore made up of people who not only frequently came from a single distinctive cultural background (Dutch, Portuguese, English, and so on), but who were also part of the various subcultures associated with long ocean voyages during the epoch of exploration. These shipwreck societies were, consequently, mostly male. Furthermore, the majority of our research subjects had narrowly escaped death and were psychologically traumatized, arriving at their islands nearly drowned and sometimes naked and wounded.

So, clearly, shipwreck survivors are not ideal experimental material. What scientists pursuing the forbidden experiment would really want is people who are strangers to one another, who lack any cultural background, who are comfortably taken to an isolated, plentiful environment, and who are then left to establish a new society that researchers could secretly watch unfold. Nevertheless, we can still learn from the few precious natural experiments that have occurred.

We have already discussed some shipwrecks that went badly, devolving into murder and cannibalism. But what factors were shared by shipwreck societies that were most successful? In our sample, the groups that typically fared best were those that had good leadership in the form of mild hierarchy (without any brutality), friendships among the survivors, and evidence of cooperation and altruism—all key elements of the social suite.

Survivor communities manifested cooperation in diverse ways: sharing food equitably; taking care of injured or sick colleagues; working together to dig wells, bury the dead, coordinate a defense, or maintain signal fires; or jointly planning to build a boat or

class, rank, sex, and race), reflecting the sort of in-group bias that is also a part of the social suite. Tensions erupted, and in late September, the crew attacked the passengers. They were repelled by twelve men organized by the captain. Afterward, he attempted to organize punishment for the ringleaders, but the lashing was staved off by the entreaties of one of the women whom the crew had attacked.

The eighteen-year-old son of the captain, who himself showed great leadership during the ordeal, kept a diary in penguin blood written in the margins of salvaged newspapers. He perceptively described their predicament:

> I must acknowledge that to me it was always incomprehensible what could induce such a feeling of hostility to exist at this period... among the passengers generally. It is true that our troubles were calculated to ruffle our tempers and render us irritable; but at the same time one would have imagined that in our extreme exigency, with starvation almost inevitable, the common dictates of humanity would have been sufficient to suppress outbreaks and induce each to commiserate with his fellow-sufferer.[27]

Group divisions remained prominent even after the crew members' attack. Rather than working together and pooling the scarce available salvaged materials, three separate groups competed to build boats to leave for Tristan da Cunha, an island twenty miles away. One party of six left on October 19; they were not heard from again. But another party made it to Tristan da Cunha on November 8 and sounded the alarm. The others were then quickly rescued. Would the survivors of the *Blenden Hall* have fared better if they had not been plagued by aggression for their entire four-month stay? Probably. But in the end, their access to necessary resources likely reduced the extent and impact of the strife, and their capable leadership and evident cooperation were crucial too.

In the case of the *Sydney Cove*, wrecked on Preservation Island off Tasmania on February 9, 1797, fifty-one people initially made landfall. The documentary and archaeological evidence suggests the creation of substantial social order, including collective

digging of a well and construction of a common dwelling; and surviving accounts indicate altruistic acts ranging from saving a shipmate from drowning to going to search for help.[28]

On February 28, seventeen men set out in a longboat for Port Jackson, on the mainland, but wrecked *again,* this time on the southeastern coast of Australia on March 1, at which point they began walking to Port Jackson, nearly four hundred miles away. Here is how the supercargo, William Clark (the person charged with overseeing the cargo and its sale), who led this secondary expedition, put it:

> Imagination cannot picture a situation more melancholy than that to which the unfortunate crew was reduced—wrecked a second time on the inhospitable shore of New South Wales; cut off from all hopes of rejoining their companions; without provisions, without arms, or any probable means either of subsistence or defense, they seemed doomed to all the horrors of a lingering death, with all their misfortunes unknown and unpitied. In this trying situation, they did not abandon themselves to despair.... Danger and difficulty lessen as they approach—the mind, as if its ultimate strength were reserved for arduous occasions, reconciles itself with calm resignation to sufferings from which, on a more distant view, it would recoil with horror.[29]

The success of their journey depended not only on this mental fortitude but also on the fact that the Aboriginal inhabitants of Australia showed noteworthy altruism to the strangers. On several occasions, Clark reported that they were befriended by locals who escorted them up the coast, gave them fish and other food, and even rowed them across rivers. In his diary entry of March 29, 1797, Clark wrote that there appeared to be "nothing human" about the Aborigines "but the form," and he frequently referred to them as "savages"—a reflection of our universal tendency toward in-group bias. But Clark soon changed his tune:

> We came to a pretty large river, which, being too deep to ford, we began to prepare a raft, which we could not have completed till next day had not three of our native *friends*,

> from whom we parted yesterday, rejoined us and assisted us over. We were much pleased with their attention, for the act was really kind, as they knew we had this river to cross, and appear to have followed us purposely to lend their assistance.[30]

And then again, a few days later, on April 2:

> Between 9 and 10 o'clock we were most agreeably surprised by meeting five of the natives, our old friends, who received us in a very amicable manner, and kindly treated us with some shellfish, which formed a very acceptable meal, as our small pittance of rice was nearly expended.[31]

A couple of other encounters with the indigenous people were more hostile, and one meeting resulted in three men sustaining wounds. Still, the overall interaction hardly supported Governor John Hunter's later summary of the trek in which he described the "savage barbarity of the natives."[32] If anything, it appears that the Aboriginal people saved the strangers' lives. Clark's party viewed them as both barbarians and friends. I would not be surprised if the indigenous Australians felt similarly about Clark and his men.

There were just three survivors of Clark's group, but they were able to sound the alarm about the others stranded in the first shipwreck, and they were then rescued (twenty-one of the thirty-four left behind had survived).

Cooperation was key to survival in the wreck of the *Doddington.* In the middle of the night of July 17, 1755, after the ship had rounded the Cape of Good Hope and sailed eastward for a day, it struck a rock in Algoa Bay in the Indian Ocean. As usual, the disaster was swift and brutal, as the journal of William Webb, the third mate, recorded:

> The first stroke awoke me, being then asleep in my Cabin. I made all the haste I could to get upon deck, where I found everything in the most terrifying condition imaginable; the ship breaking all to pieces and everyone crying out to God for mercy, as they were dashed to and fro by the

violence of the sea.[33]

Within minutes, he was battered by waves, breaking "the lesser bone in [his] left arm" and sustaining a blow to his head that knocked him unconscious. When he awoke sometime later on a plank, he found a nail in his shoulder. He made it to nearby Bird Island, although he almost drowned. Only twenty-three people (all crew members) got to this small rocky island alive. The other two hundred and forty-seven people, both crew and passengers, perished.[34]

Bird Island, just forty-seven acres and rising just nine meters above sea level, lacks any fresh water. Now part of Addo Elephant National Park, the island is still home to a large breeding colony of seabirds on whose eggs the castaways gorged. The men, who could actually see the mainland in the distance, survived for seven months on the island, exploiting salvaged food and supplies from the wreck (including, as usual, casks of liquor) and eating fish, birds, seals, and eggs.[35]

One of the castaways, Richard Topping, was a carpenter. Assisted by the other men and, especially, by the inventive Hendrick Scantz (a seaman who had training as a blacksmith and could fashion tools), he was able to build a sloop. The men named it the *Happy Deliverance* and sailed away from the island on February 16, 1756. All but one of the men who made it ashore survived to leave the island (though nearly half died subsequently during their efforts to sail north along the African coast).[36]

Webb's detailed account of their seven months stranded on Bird Island, their subsequent journey up the coast, and their final deliverance in late April focuses on their efforts to get food and build a sloop and gives detailed descriptions of wind and sea conditions.[37] We can piece together glimpses of their collective lives. Some hierarchy was evident in the group. Certain castaways were singled out for special treatment, as noted in Webb's journal: "Our brandy all expended, except two gallons, which we keep for the Carpenter."[38] When supplies of water and food ran low, provisions were rationed fairly and amicably. The only mention of any friction was one unsolved and quickly forgotten episode of a theft from the ship's treasure chest.[39] There are many descriptions of cooperative efforts to care for the wounded, salvage the wreck, fish and forage for food, make rope and repair fabric for sails, and

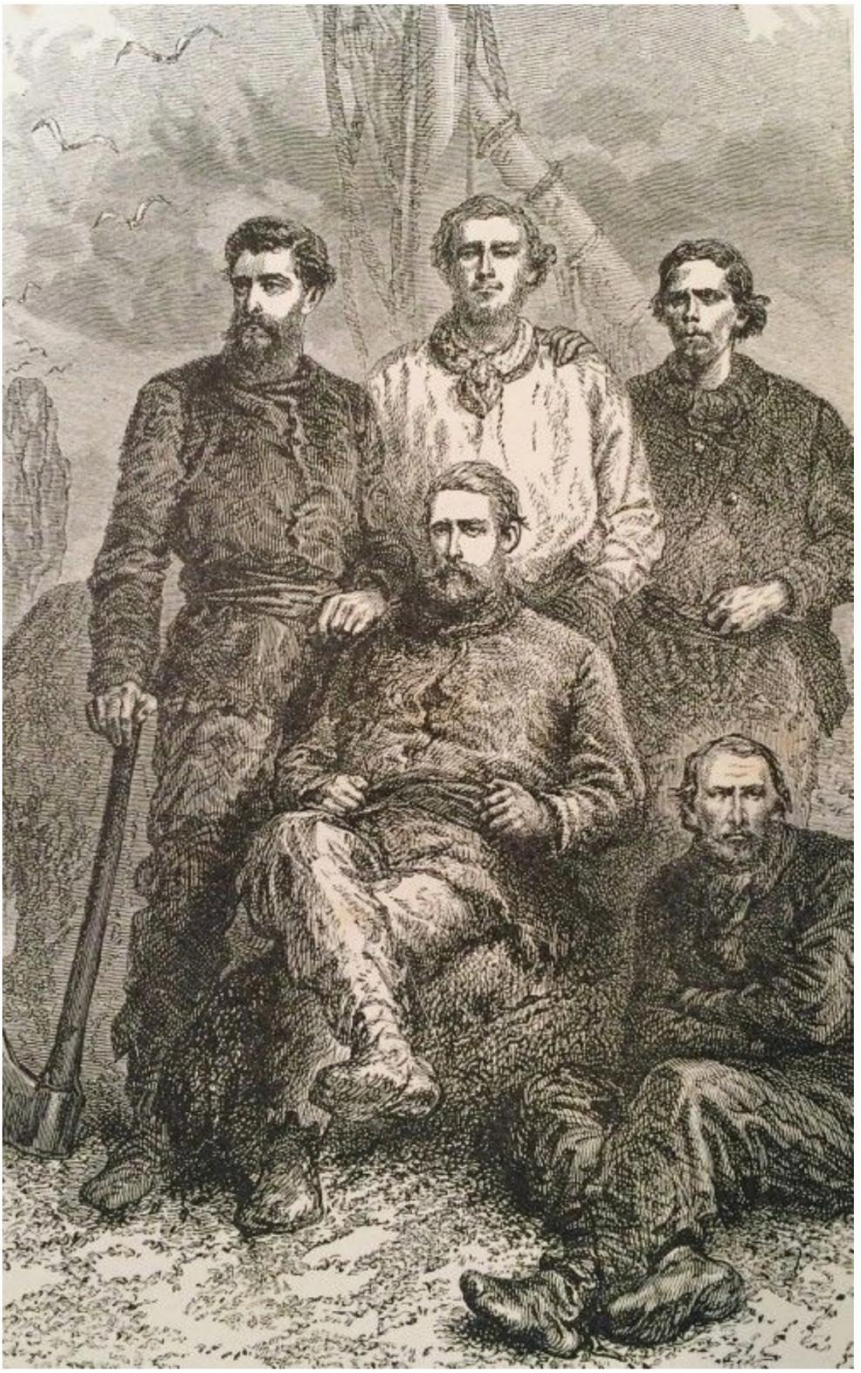
build the sloop in which to escape. The men also built a few catamarans and a small fishing boat. On several occasions while using these watercraft, the men had to rescue one another from drowning or from being stranded on another nearby islet. They were united in a common purpose.

The men were also kind to one another. On July 20, three days after their stranding, the body of the second mate's wife, Mrs. Collet, washed ashore. Mr. Collet apparently had "a most tender affection for his wife," so the men decided to conceal the discovery from him at first and reveal the news to him later. They distracted Collet and took him to the other side of the island, then buried his wife (alas, in the bird dung that covered the ground) and read a burial service for her out of a copy of the *Book of Common Prayer* they had salvaged. When they told Mr. Collet about it a few days later, he reportedly could "hardly believe" it until he was shown his wife's wedding ring.

Two Wrecks at the Same Time and Place

The closest we come to an almost perfect natural experiment involves two ships, the *Invercauld* and the *Grafton,* wrecked on opposite sides of Auckland Island in 1864. The island, which lies two hundred and ninety miles south of New Zealand, is twenty-six miles long and sixteen miles wide. It was the site of so many shipwrecks in the nineteenth century that castaways would sometimes stumble on evidence of previously wrecked crews. For example, two years after the *Grafton* crew was rescued, ten survivors of the wreck of the *General Grant* spent eighteen months on the island and discovered the cabin made by the men of the *Grafton* (and took up residence in it). Eventually, the New Zealand government started placing supplies and signs on the island to assist people washed up on its shores.

Still, although they struggled for their lives on the same island at the same time, the crews of the *Invercauld* and the *Grafton* were not aware of each other. In the case of the *Invercauld*, nineteen of twenty-five crew members made it ashore, and only three survived, for just over a year, until their deliverance. In the case of the *Grafton*, all five people on board reached land, and all five made it off the island nearly two years later. What explained the different survival outcomes? Comparing these two cases allows us to explore the impact of the social suite and the role of friendship,



The men stuck together and worked collaboratively from the very beginning. Despite some disagreements, there was tremendous cohesion. At the time of the wreck, Raynal had been very ill, and, when the ship foundered, the men did not abandon

him but contrived to bring him (and valuable supplies) ashore via a rope. This highly visible altruistic act at the start served to unite and motivate the survivors, and it signaled their intent to cooperate and invest in reciprocal relationships. It also provides a clear contrast to the *Invercauld* crew's abandonment of a man at the bottom of the cliffs, an act that set the stage for a different collective fate.

The leadership and communal spirit of the crew of the *Grafton* were also superior. The experienced Raynal was extraordinarily resourceful. He guided the crew to build a twenty-four-by-sixteen-foot cabin with a stone chimney next to a stream close to the shore. Eventually, he also built a forge and bellows (made of sealskins), which the men used to fabricate nails and tools from salvaged metal. Using a Roman recipe, he made concrete by baking seashells and combining the result with sand. He even taught himself how to tan leather and make shoes (also from sealskins) in their first year on the island.

During their encampment, Raynal crafted chess pieces, dominoes, and a pack of cards that they later wisely discarded because Musgrave was a bad loser and fights often erupted. The crew taught one another foreign languages and mathematics. One advantage of their impromptu school, Raynal noted, was that it equalized the men: "We were alternately the masters and pupils of one another. These new relations still further united us; by alternately raising and lowering us one above the other, they really kept us on a level, and created a perfect equality amongst us."[47] Of course, these activities reflected teaching and learning within the group, another part of the social suite. Still, the men did not lack all hierarchy, and they shared particular respect for Raynal.

Not long after the crew had become somewhat settled, in February, Raynal proposed that they should vote and choose one of themselves as "not a master or a superior, but a 'head' or 'chief of family,'" and that this person's duties would include "to maintain with gentleness, but also with firmness, order and harmony."[48] They further agreed that this person could be replaced by some other member of the crew on a future vote if this was deemed necessary. Raynal suggested Musgrave for the role; the men unanimously elected him, and he remained in this capacity throughout their two-year ordeal.

At one point, Musgrave fell ill, and Raynal realized that "the

death of any one of us, in our present circumstances, would more injuriously affect the morale of the others, and perhaps be attended with fatal consequences for all of us. So my constant prayer is, that in our already severe afflictions, God would spare us this trial."[49] Ultimately, three of the men (Musgrave, Raynal, and McLaren) set sail in the repaired dinghy on July 19, 1865, and made it to Stewart Island in New Zealand after five days. Musgrave and others returned immediately to rescue the remaining two men. Afterward, the crew members of the rescue ship searched the island and found the body of James Mahoney, one of the crew of the *Invercauld*, though they did not realize it.[50]

Individual character clearly played a role in the *Grafton* survival experience. Captain Dalgarno of the *Invercauld* seemed mostly interested in his own survival, but Captain Musgrave showed real leadership throughout the ordeal. A few months after his own rescue, he returned yet again to the island on the off chance that there were other men who had been shipwrecked there, noting that, "having suffered myself, I would gladly have gone to the pole to have succored others under similar circumstances."[51]

On November 7, 1865, Raynal read a newspaper article titled "Narrative of the Wreck of the *Invercauld* on the Auckland Islands," by Captain Dalgarno, and this was the first anyone on the *Grafton* knew of another shipwreck on their island at the same time.[52] Musgrave offered his thoughts on Dalgarno's lack of leadership in a letter to a merchant friend in Invercargill to whom his own memoir was later dedicated. In the letter, he noted that Dalgarno's own account "proves that there has been no unity amongst them, neither has the Captain attempted (or he has not been able) to hold any authority or influence over them; to which cause I attribute a great number of their deaths."[53]

The differential survival of the two groups may be ascribed to differences in initial salvage (though, as noted, the *Invercauld* crew found abandoned huts and tools within a month of their arrival) and differences in leadership, but it was also due to differences in social arrangements. Among the *Invercauld* crew, there was an "every man for himself" attitude, whereas the men of the *Grafton* were cooperators. They shared food equitably, worked together toward common goals (like repairing the dinghy), voted democratically for a leader who could be replaced by a new vote,

dedicated themselves to their mutual survival, and treated one another as equals. In all these regards, the *Grafton* crew had many features in common with the *Julia Ann* survivors, including the fact that their ordeals began with the saving of a life. Both groups also had technical expertise, selfless leadership, an ethos of cooperation, and a risky trip taken by a few in order to seek help for the others.

Pitcairn Island

These shipwreck societies, while unintentional in their creation, all had a desired end: their participants wanted to rejoin the broader world. In contrast, the founders of some other unintentional communities had no such desire. One of the most notorious natural experiments of people thrown together in isolation involved the mutineers of the *Bounty* in 1789, who subsequently established a small society on Pitcairn Island that still endures today. This case is widely studied for insights into everything from space colonization to constitutional governance.[54]

Fletcher Christian, the master's mate, led a group of eighteen other mutineers and took over the *Bounty* by seizing the captain, William Bligh, a protégé of the British explorer Captain James Cook. Notwithstanding popular depictions of Bligh as a tyrant, he was, by many accounts, an enlightened and humane captain, and he had actually been a friend of Christian's. Bligh and eighteen loyal men were cast off the ship in a twenty-three-foot open launch. They navigated four thousand miles and landed on Timor forty-seven days later.[55] The mutineers headed to Tahiti, where the ship had made landfall not long before the mutiny. A leading theory of the cause of the mutiny is that the mutineers simply wanted to return to Tahiti and resume the pleasant and sexually adventurous lives they had led there instead of continuing with their perilous and uncomfortable lives at sea under the thumb of the British navy. After the mutineers got back to Tahiti, however, nine of them, including Christian, decided to settle at a place that British authorities would not discover. After kidnapping some Tahitian men and women, they set out to find a remote yet habitable island.[56]

At some point in the voyage, Christian decided to read some of

the books aboard the *Bounty*. The description of one island, "isolated on the outer edge of island clusters... halfway between South America and Australia," caught his attention.[57] It had been sighted only a couple of times in recorded history and was said to have steep, unwelcoming cliffs and dense foliage; furthermore, it had only a single, dangerous space for docking ships. But when they reached the designated geographic coordinates, they found nothing. Assuming that the island was likely mismarked, Christian began searching the general vicinity, and not long after, Pitcairn Island rose above the horizon. The mutineers were thrilled by the outside world's inaccurate knowledge of the island's location, which added another layer of protection and concealment. And to further reduce the probability of being found, they decided to burn their ship so that any other ships sailing by would not spot it. Pitcairn Island would become their permanent home and the site of an entire community that they would build from scratch.

It was immediately clear that the island could comfortably accommodate the small community. Uninhabited, though with traces of a disappeared population, its four square miles had trees for lumber, fresh-flowing water, and fertile volcanic soil covering an eighty-eight-acre plateau. The bordering shores supported fishing for rock cod, red snapper, mackerel, and lobster. The climate was warm, largely pleasant, and, with eighty inches of rain annually, conducive to year-round farming.[58] The nine white mutineers split the island into nine equal shares; the six Tahitian men were entirely excluded from land ownership. The mutineers each claimed one Tahitian woman, while the six Tahitian men were allotted three women to share (I do not know how else to describe these grossly predatory actions).

Initially, in spite of these racial and gender inequalities, the group lived in relative peace. The mutineers managed to cooperate to secure their new home. They established rules to conceal the community's presence and make use of the land. They stripped and salvaged all they could from the *Bounty* before setting it aflame. Houses were to be built inland. The cutting of trees near the shore was forbidden. A lookout was maintained and fires were doused if a passing vessel was sighted.[59] With the remaining stores from the *Bounty* (including pigs, goats, and chickens) and the natural produce they found on arrival (coconuts, fish, seabirds, and eggs), the island's new population had food enough to last a

In 1808, nearly twenty years after the mutiny, a ship on a seal-hunting expedition happened on Pitcairn Island. Captain Mayhew Folger and the crew of the *Topaz* at first thought it was uninhabited. They spent ten hours on the island with the thirty-five people who lived there—the surviving mutineers of the *Bounty*, their Polynesian captives, and their progeny. Folger was awed by the community's order and its members' ability to live without conflict in such a confined space. Referring to surviving mutineer John Adams, Folger wrote that he "lives very comfortably as Commander in Chief of Pitcairn's Island, all the children of the deceased mutineers speak tolerable English, some of them are grown to the size of men and women, and to do them justice, I think them a very humane and hospitable people, and whatever may have been the errors or crimes of [Adams] the mutineer in times back, he is at present in my opinion a worthy man."[67] Alas, a far less sanguine portrait emerged two hundred years later, revealing an apparently centuries-long culture of sexual predation of girls by older men. The island was still extraordinarily isolated, with only rare supply deliveries by ship and fewer than fifty inhabitants, but in 2004, many descendants of the mutineers were convicted of rape and child abuse following an explosive trial that uncovered the practice of "breaking in" virtually all of the island's ten-to twelve-year-old girls.[68]

The original settlers of Pitcairn were unable to form a functional society. If there is a blueprint for a basic, functional society that has been shaped by evolution and that is part of our genetic heritage, why do societies ever fail? Broadly, the blueprint specifies the shape of a society that humans form, but only if they are able to form one at all. Many barriers can stand in the way. First, humans have a parallel propensity for animosity and violence, and this can, of course, contribute to collapse. The social suite serves as a check on these tendencies (and it's ordinarily an extremely successful one). Limitations in environmental circumstances also play a role in social disaster, as do especially disruptive individuals and dysfunctional cultural elements (such as the deeply embedded sexual violence on Pitcairn).[69] Not all attempts, however organic, to create social order succeed. There can be stillborn societies.

So why did Pitcairn in particular fail? The usual causes of social collapse in larger states—such as bureaucratic

mismanagement or corruption, emigration, war, environmental degradation, and population pressure—do not apply here. Nor were there resource constraints. Some have argued that the extreme isolation fostered total anarchy, but other isolated groups have coped well in similar circumstances, as we saw with the shipwrecks. In my view, the root cause of the anarchy in early Pitcairn was the initial inability of the colonists to sustain any cooperative impulses, an inability fueled by explicit racism, by intoxication with locally distilled alcohol (as happened in the early stages of the *Blenden Hall* wreck), and by the competition among the men for the smaller number of women. There was also notably ineffective leadership. Christian was a good mutineer but not a good governor of a colony, and the plans for fully democratic governance became unwieldy within a few years.

Sociologist Max Weber argued that one definition of a state is an entity in a given area that claims a monopoly on the *legitimate* use of force (as judged by the people themselves).[70] As states fail, they no longer protect individuals on equal terms, and factionalism often results in unrestrained violence. The features of the social suite stand in opposition to such violent disorder. Having upended one social order, the Pitcairn colonists were unable to invent another.

Stranded in Antarctica

Leadership—as part of what I call mild hierarchy—is clearly important in the success and survival of these isolated social groups, especially when the leader works to foster solidarity and, perhaps ironically, to reduce hierarchy and ensure egalitarianism and cooperation within the group. We can see the importance of leadership through the Pitcairn colony's lack of it and in the contrast between the *Grafton* and *Invercauld* wrecks. Let's consider one final example of an isolated group that succeeded, in part due to this sort of leadership.

In 1914, seasoned polar explorer Ernest Shackleton is said to have placed an advertisement in a London newspaper: "MEN WANTED for hazardous journey, small wages, bitter cold, long months of complete darkness, constant danger, safe return doubtful, honor and recognition in case of success."[71] Shackleton, who had ventured to Antarctica twice before, was assembling a crew to

accompany him on his Imperial Trans-Antarctic Expedition, the goal of which was to sail across the entire continent via small and shifting gaps of open water. However, on January 18, just forty-five days after the *Endurance* departed from South Georgia Island, the water surrounding the ship froze. The twenty-eight men aboard were trapped in a wasteland of ice. The promise of bitter cold, complete darkness, and constant danger had been realized.

For nine months, the ship, firmly wedged in an ice floe that was slowly drifting away from Antarctica, served as a home for the stranded men. Realizing that their survival, not the original expedition, was the new goal, the men began to make the necessary preparations to endure the harsh winter months, personalizing small living spaces within the ship, organizing the ship's food supply, and occasionally venturing out onto the ice to exercise or hunt penguins and seals.

On September 2, the *Endurance* started to buckle under the crushing pressure of the encapsulating iceberg. On October 27, the men reluctantly abandoned the ship and pitched their tents directly on the ice. The ice floe was drifting toward Elephant Island, which had not previously been visited by humans due to its inaccessibility and its inhospitable weather and landscape. When the island came into view, on April 9, the crew set out in three small boats (one whaleboat and two cutters), traveled through some of the world's coldest and most turbulent waters, and successfully landed there seven days later.

Given the crew's dire circumstances, Shackleton made a decision: he and five other men would take one of the small boats, sail the eight hundred miles back to South Georgia Island, and then hike across snow-clad mountains to reach the small whaling station there. Astonishingly, four months after leaving Elephant Island, Shackleton returned in a small steamer to rescue the twenty-two men who had stayed behind. Thus, all twenty-eight crew members stayed together as a community for a total of five hundred and thirteen days, and twenty-two men spent an additional one hundred and twenty-eight days together before Shackleton returned to rescue them. No one died.[72]

How did these men, confined and isolated for almost two years, organize themselves into a functional community and interact on a day-to-day basis? How did their social arrangements contribute to their success?

The work required to sustain this community was constant and

overwhelming—hunting penguins and seals, building cabins, pitching tents, preparing meals, moving supplies, taking care of the dogs, and standing watch in awful conditions. But by and large, it was shared equally and amicably among crew members, just as it was with the *Grafton* survivors. The men chosen for this expedition —biologists, carpenters, physicists, surgeons, navigators—came from specialized backgrounds and different levels of society, but they cooperated and worked together effectively. Frank Worsely, the commander of *Endurance*, noted the interpersonal dynamics of the group in his diary:

> We are now six months out from England, and during the whole of this time we have all pulled well together and with an almost utter absence of friction. A more agreeable set of gentlemen and good fellows one could not wish for shipmates. Any and every duty is undertaken cheerfully and willingly and no complaint or whining is ever heard no matter what hardship or inconvenience may be encountered. The principal credit of this is due to the tact and leadership of the Head of the Expedition [Shackleton] and the cheery happiness and bonhomie of Wild [Second-in-Command]. They both command respect, confidence, and affection.[73]

Many have echoed Worsely and attributed this success in building a cohesive and cooperative group to Shackleton, who asserted that whether they lived or died, they would do it together. Shackleton required that all men, regardless of profession or status, yield to his authority and contribute to all forms of labor. Meals and meetings were strictly scheduled and mandatory, labor was allocated in a clear and fair manner, and food rations were split equally among the men (though, tellingly, Shackleton often gave his designated allotment to his crew). The men also taught and learned from one another, like the *Grafton* crew had, evincing a key feature of the social suite.

Strikingly, the men spent a lot of time on organized entertainment, passing the time with soccer matches, theatrical productions, and concerts. On one occasion, the men etched out a track in the snow, placed bets, and raced on dogsleds in a competition they dubbed the "Dog Derby."[74] Frank Hurley, the

expedition photographer who produced the now-iconic photographs of their journey, noted in his diary: "Great fancy dress gathering and betting today on the Antarctic Derby Stakes. All available chocolate and cigarettes, the local currency, have been brought into requisition.... All hands are given the day off to see the race."[75] On the winter solstice, another special occasion, Hurley reported a string of thirty different "humorous" performances that included cross-dressing and singing. In his journal from the ordeal, Major Thomas Orde-Lees (who later became a pioneer in parachuting) noted: "We had a grand concert of 24 turns including a few new topical songs and so ended *one of the happiest days of my life.*"[76]

In sum, in this group stranded in Antarctica, there was not a totally egalitarian distribution of power. But there was friendship, cooperative effort, and an equitable distribution of material resources. The key to its cohesion and survival was not only the capable leadership of Shackleton and the abilities of the men, but also their ability to express so many features of the social suite.

The Settling of Polynesia

The islands of the Pacific Ocean have provided other natural experiments of longer duration than the shipwrecks and even Pitcairn; whole societies have been established and endured for centuries, growing to substantial size. This was the great and well-studied case of the Polynesian expansion, where, over the course of more than a thousand years, settlers—by design or by accident—landed on islands throughout the Pacific, spreading eastward from their ancestral home. The Polynesian settlement of the Pacific islands illustrates a variety of historical and anthropological principles, and it is an especially powerful case study of the role of environmental constraints on social order. Being able to compare outcomes across widely separated islands with variable features really does feel like an experiment.[77]

When the Polynesians settled the Marquesas Islands around 700 CE, they initially lived in isolated coastal hamlets and hunted and gathered their food. But over a period of centuries, they settled the interior, invented agricultural practices, developed a tradition of large-scale feasts, dramatically expanded their population, and fashioned stone monuments and complex

to civilization.[83] And I could not find any cases originating in Africa or the Americas, in part because of more limited seafaring technology and in part because of the absence of records. Still, the Polynesian expansion, in addition to illustrating the effect of environment, also illustrates the universal emergence of the social suite, despite the diverse political arrangements that arose over the centuries and that have otherwise preoccupied social scientists and historians. Once again, when it comes to our way of living socially, we are more similar than different.

The existence of failed societies, like Pitcairn, and societies featuring cannibalism, like Mangaia, do not subvert the centrality of the social suite. The social suite offers a successful, evolutionarily time-tested strategy for group living. Sometimes, groups cannot coalesce to express the social suite. Nevertheless, they do not have any viable alternatives to it.

Our observation about the sensitivity of social arrangements to the environment (for example, how plentiful food is) raises a subtler issue. We have seen that environmental constraints can lead to misshapen societies. But the role of the environment in shaping social interactions, both over the course of a person's lifetime and over the course of the evolution of our species, highlights a more profound point. If environmental variation causes cultural variation, then it is possible that any unvarying, universal features of human societies would be attributable to specific, consistent features of the environment itself. Maybe the reason that people form basically similar core social arrangements everywhere is that there is something consistent about the environment to which our species is responding. What might that be?

In a fundamental sense, there is indeed one aspect of the environment humans face that does *not* vary. That constant element is *the presence of other humans*. As we will see in chapter 11, humans have evolved to be social in a particular way precisely because they have been social in the past. The social systems our ancestors created became a force of natural selection. And once our species started down the path of living socially, humans set into motion a feedback loop that continues to shape how we live with one another today.

When you put a group of people together, if they are able to form a society at all, they make one that is, at its core, quite predictable. They cannot create any old sort of society they want.

Humans are free to make only one kind of society, and it comes from a specific plan. Evolution has provided a blueprint.

CHAPTER 3

Intentional Communities

Near the end of March 1845, Henry David Thoreau borrowed an ax from a friend and shipwrecked himself, so to speak, on the shore of Walden Pond, in Concord, Massachusetts. He wanted to conduct an experiment in solitary living. He started by felling trees to make a small cabin furnished with three chairs—"one for solitude, two for friendship, three for society"—though his extra chairs were rarely occupied.[1] He grew his own food, considered eating woodchucks raw, read widely in multiple languages, and harbored runaway slaves. He also wrote *Walden,* a book on the merits of self-reliance, nature, and transcendental philosophy that was so influential, it remains widely read today.

The yearning to return to a mythical, bountiful state of nature with the goal of creating a new kind of social order where humans thrive has motivated dreamers and cranks, both individuals and groups, for thousands of years. Thoreau was focused on the benefits of solitude—which is paradoxical, in my view, given how natural our social state is. When all alone, he felt he grew "like corn in the night," with nature itself as his companion.[2] "Every little pine needle expanded and swelled with sympathy and befriended me," he wrote.[3] He did not have much use for the company of other humans, about whom he said:

> We meet at very short intervals, not having had time to acquire any new value for each other.... We have had to agree on a certain set of rules, called etiquette or politeness, to make this frequent meeting tolerable, and that we need not come to open war.[4]

Thoreau did not much like formal institutions either:

> One afternoon, near the end of the first summer, when I went to the village to get a shoe from the cobbler's, I was seized and put into jail, because... I did not pay a tax to, or recognize the authority of, the state which buys and sells men, women, and children, like cattle at the door of its senate-house.... Wherever a man goes, men will pursue and paw him with their dirty institutions, and, if they can, constrain him to belong to their desperate odd-fellow society.[5]

He was let out of jail the next day when an unknown friend apparently paid his poll tax for him.[6] He had not paid it in years because he objected to the use of the funds to wage war and expand slavery, as he later explained in his famous essay "Civil Disobedience"—which would go on to inspire the work of Mahatma Gandhi and Martin Luther King Jr.[7]

More than a century later, I visited a reconstruction of Thoreau's cabin at Walden, and it was as austere as a jail cell. I had moved to Concord with my wife and three children in 2001. In a coincidence that my family calls a "low brush with fame," we had acquired the former home of Sam Staples, the town constable whose duty it had been to jail Thoreau but who was nonetheless Thoreau's friend.

Attempting New Societies

Thoreau's observations regarding social interactions of both a personal and institutional nature have also been explored by other thinkers. According to a theoretical classification introduced by philosopher Ferdinand Tönnies in 1887 and later advanced by sociologist Max Weber, people's social connections are of two general types: *Gemeinschaft* and *Gesellschaft.*[8] *Gemeinschaft* refers to personal interactions and their accompanying roles, values, and beliefs, which roughly correspond to the notion of a face-to-face community. But social ties can also involve more indirect interactions, impersonal roles, and the formal norms and laws about such connections. These interactions with a broader and impersonal society are known as *Gesellschaft.*

The distinction highlights a key problem with modern life. Many people have wondered how a sense of community can be

preserved or regained in a large, impersonal society. Thoreau and other hermits occasionally found social interactions so unsatisfying and oppressive that they abandoned them altogether (at least for a while). But another response to the changing scale and quality of social order has been to form entirely new, smaller communities. Since at least Roman times and on every continent, communal movements have arisen with the objective of breaking away from the *Gesellschaft* of modern living to move back toward a society more firmly based on *Gemeinschaft*.[9] People who join communes often aim to forsake impersonal interactions and establish greater authenticity in their personal relationships.

Utopian communal experiments are typically more idyllic than the accidental communities of people thrown together by shipwrecks or other unforeseen or traumatic events. Still, they are not always more successful. From countless nineteenth-century American utopias to twentieth-century Israeli kibbutzim and other examples we will now review, most such experiments have failed, usually within a year or two. It can hardly be insignificant that the great majority of these experiments have been utter flops.[10] Even so, these natural experiments help us see which features of social organization recur and are crucial for success. While intentional communities have sometimes succeeded in forming social arrangements that temporarily deviate from the social suite, most have not. Few, if any, have achieved anything radically alien.

American Utopian Experiments

In 1516, Thomas More coined the word *utopia* from Greek root words that mean "no place" but that in English also sound like the roots for "good place"—a telling ambiguity, given the failure of so many attempts at utopian societies.[11] America has been especially fertile ground for communal utopian efforts, and they have left a mark on society. Many people are aware of them through the products made by such communities—Shaker furniture, Amana appliances, and Oneida silverware, for example. Others may have visited tourist sites such as Fruitlands and Brook Farm in Massachusetts and marveled at self-sufficient, bygone lifestyles. Still others may remember 1960s-style communes or even apocalyptic cults like the Branch Davidians.

Over the years, people's reactions to these efforts have ranged